



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/517,675

07/20/2005

Martin Geier

23135

1884

535 7590 11/12/2009
K.F. ROSS P.C.
5683 RIVERDALE AVENUE
SUITE 203 BOX 900
BRONX, NY 10471-0900

EXAMINER

FISHER, ABIGAIL L

ART UNIT

PAPER NUMBER

1616

MAIL DATE

DELIVERY MODE

11/12/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/517,675	Applicant(s) GEIER ET AL.	
	Examiner ABIGAIL FISHER	Art Unit 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 32-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 23 2009 has been entered.

Receipt of Amendments/Remarks filed on August 28 2009 is acknowledged. Claims 1-31 were/stands cancelled. Claims 32-37 are added. Claims 32-37 are pending.

Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either reiterated or newly applied. They constitute the complete set presently being applied to the instant application.

Claim Objections

Claim 37 is objected to because of the following informalities: the claim is grammatically confusing. The claim recites "exposing the environment with an amount of the composition defined in claim 36 in an amount effective". The presence of the two "amount" makes the claim confusing. The examiner suggests rewriting the claim to state "exposing the environment with the composition defined in claim 36 in an

Art Unit: 1616

amount"... or writing the claim as ..."defined in claim 36 wherein the amount is effective to attract mosquitoes or fruit flies." or something similar. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 33-35 and 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 33 recites the limitation "the environment" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 37 recites the limitation "the environment" in line 2. There is insufficient antecedent basis for the limitation in the claim.

Claims 34-35 are included in the rejection as they depend on a rejected base claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Applicant Claims
2. Determining the scope and contents of the prior art.
3. Ascertaining the differences between the prior art and the claims at issue, and resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 32-33 and 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bosch et al. (Chem. Senses, 2000, cited in the Office action 9/26/2008).

Applicant Claims

The instant application claims a composition for attracting mosquitoes, which consists essentially of: (a) lactic acid or an acceptable salt thereof; (b) caproic acid or an acceptable salt thereof; and (c) ammonia in a respective molar ratio of 5:3:9.

The instant application claims a method of attracting mosquitoes at a level of attractiveness equivalent to a level of attractiveness of a human comprising the step of exposing the environment with an evaporated composition as indicated above.

The instant application claims a composition for attracting mosquitoes or fruit flies which consist essentially of: (a) lactic acid or an acceptable salt thereof; (b) caproic acid or an acceptable salt thereof; and (c) ammonia in a respective molar ratio of 1:2:0.3.

The instant application claims a method of attracting mosquitoes or fruit flies comprising the step of exposing the environment with the above composition in an amount effective to attract mosquitoes or fruit flies.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

Bosch et al. is directed to the study of compositions comprising fatty acids and their ability to attract female *Aedes aegypti* (female mosquitoes aka blood-sucking arthropods). This study utilized single fatty acids in combination with lactic acid as well as combinations of fatty acids with lactic acid. The fatty acids that were the most effective were low (C_1 to C_3) or medium (C_5 to C_8) (page 325, right column, first paragraph). C_6 corresponds to caproic acid. C_1 corresponds to acetic acid. (figure 2) The amount of lactic acid utilized corresponds to 3 $\mu\text{g}/\text{min}$, the amount of ammonia corresponds to 5 $\mu\text{g}/\text{min}$, and the fatty acids were utilized in two different dilutions 5 and 500 μl in 50 ml of deionized water at different flow rates 3, 30, and 300 ml/min (page 324, application of the odor stimuli). Ammonia is only attractive in combination with lactic acid (page 327, right column, first complete paragraph). Lactic acid is taught as

Art Unit: 1616

the indispensable synergist (page 327, right column, third paragraph). Exemplified formulations comprise lactic acid, ammonia and C5 (valeric acid) (table 4). It is taught that it is conceivable that the concentrations and proportions of the synthetic compounds tested so far are not optimal (page 329, first complete paragraph).

**Ascertainment of the Difference Between Scope the Prior Art and the Claims
(MPEP §2141.012)**

While, Bosch et al. exemplify a formulation for attracting mosquitoes comprising valeric acid (C5), ammonia and lactic acid, Bosch et al. do not exemplify a formulation comprising caproic acid, lactic acid, and ammonia together. Bosch et al. do not explicitly teach the ratio of components claimed.

***Finding of Prima Facie Obviousness Rational and Motivation*
(MPEP §2142-2143)**

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to utilize a combination of lactic acid, caproic acid and ammonium in combination to attract blood-sucking arthropods. One of ordinary skill in the art would have been motivated to utilize this combination as Bosch et al. teach a combination of fatty acid, lactic and ammonium provide a synergistic combination in attracting *Aedes aegypti*. One of ordinary skill in the art would have been motivated to utilize caproic acid as it is a specific fatty acid taught as increasing the attraction of the *Aedes aegypti*. One of ordinary skill in the art to replace the exemplified valeric acid with the corresponding homolog caproic acid as both are taught by Bosch et al. as producing an

Art Unit: 1616

attractive effective and compounds with similar structure are expected to possess similar properties. An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties. *In re Payne*, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). **MPEP 2144.09.**

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to vary the ratio of lactic acid, caproic acid and ammonia. One of ordinary skill in the art would have been motivated to vary the ratio as Bosch et al. teaches that it is conceivable that the concentrations and proportions of the synthetic compounds tested so far are not optimal in terms of attractiveness. The amount of the specific ingredients in a composition is clearly a result effective parameter that a person of ordinary skill in the art would routinely optimize. Optimization of parameters is a routine practice that would be obvious for a person of ordinary skill in the art to employ and reasonably would expect success. It would have been customary for an artisan of ordinary skill to determine the optimal amount of each ingredient to add in order to best achieve the desired attractiveness. It would have been obvious to one of ordinary skill in the art at the time of the invention to engage in routine experimentation to determine optimal or workable ranges that produce expected results. Where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F. 2d 454, 105 USPQ 233 (CCPA 1955).

Art Unit: 1616

Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the instantly claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Claims 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bosch et al. in view of Heath et al. (US Patent No. 5907923, cited in the Office action mailed on 9/26/08).

Applicant Claims

The instant application claims that the method further comprises the step of trapping the attracted mosquitoes. The instant application claims that the components are located in separated containers or vials.

Determination of the Scope and Content of the Prior Art (MPEP §2141.01)

The teachings of Bosch et al. are set forth above. Specifically, Bosch et al. teach formulations for attracting *Aedes aegypti* comprising lactic acid, fatty acids, and ammonia.

Ascertainment of the Difference Between Scope the Prior Art and the Claims (MPEP §2141.012)

Bosch et al. do not teach that the ammonia is from ammonia releasing compounds. However, this deficiency is cured by Heath et al.

Art Unit: 1616

Heath et al. is directed to a trapping system for fruit flies. It is taught that ammonia, acetic acid (from ammonium acetate), and putrescine are used in combination to attract fruit flies (column 8, lines 11-13). It is taught that the ammonia, acetic acid, and putrescine are utilized without interference from other chemicals.

***Finding of Prima Facie Obviousness Rational and Motivation
(MPEP §2142-2143)***

It would have been obvious to one of ordinary skill in the art to combine the teachings of Bosch et al. and Heath et al. and utilize ammonium acetate and putrescine in the composition of Bosch et al. One of ordinary skill in the art would have been motivated to utilize this form of ammonia in combination with putrescine for the added benefit of attracting fruit flies as taught by Heath et al.

It would have been obvious to one of ordinary skill in the art to combine the teachings of Bosch et al. and Heath et al. and utilize the components in separate vials. One of ordinary skill in the art would have been motivated to keep the chemicals in separate vials as a way to avoid interference between the chemicals as taught by Heath et al.

Absent any evidence to the contrary, and based upon the teachings of the prior art, there would have been a reasonable expectation of success in practicing the instantly claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Response to Arguments

Applicants argue that (1) that the data in Fig. 1 of the application shows that the claimed ratio achieves a level of attractiveness to mosquitoes that approaches that of human skin. This is evidence of a synergistic attractiveness that renders claims 32-35 patentably distinguishable over Bosch et al.

Applicants' arguments filed August 28 2009 have been fully considered but they are not persuasive.

Bosch et al. exemplify a combination of lactic acid, ammonia and valeric acid (C5). Since there is only a one carbon difference between the exemplified combination of Bosch et al. and the instantly claimed combination, one of ordinary skill in the art would expect that the combination of Bosch et al. would possess the same attractiveness as the instantly claimed combination. An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties. *In re Payne*, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). **MPEP 2144.09**. In order to show that the combination exemplified by Bosch et al. does not possess the same properties as the instantly claimed combination the comparison to Bosch must be a true side by side comparison and applicants must actually perform the experiment of the cited prior art and compare the results to that of the instant invention to show that the difference is truly unexpected and not a difference in the person performing the experiment, equipment utilized, conditions of the experiment, etc. Therefore, in order to overcome the cited prior art applicants must run

Art Unit: 1616

and compare their particular claimed combination (lactic acid/caproic acid/ammonia) to that of the cited prior art (lactic acid/valeric acid/ammonia).

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABIGAIL FISHER whose telephone number is (571)270-3502. The examiner can normally be reached on M-Th 9am-6pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Abigail Fisher
Examiner
Art Unit 1616

AF

/Mina Haghighatian/
Primary Examiner, Art Unit 1616